
Communicating with Meridian 1

Overview

A Meridian 1 system can be programmed with relevant station and CPND data from the MAT application. The MAT application can also retrieve station data from a Meridian 1 system. For example, you can create a MAT database for a site and then upload relevant data to program a system at that site. You can make modifications within the MAT application and upload these to the system. At any time, you can download system data to the MAT application for record-keeping or verification purposes. If you have a Meridian 1 system and wish to start using MAT to administer the data, you would download the data from the system and update the data in MAT to include all MAT administrative and record-keeping data.

Your PC uses a modem to communicate, through normal telephone wires, with a modem in the Meridian 1. The communications protocols must be predefined using the Site module of the MAT application. The Station and CPND modules use the Synchronize menu to schedule communications with the system.

Communications Considerations

Retrieving data is a two-stage process. The Meridian 1 data is first downloaded and stored in the current working directory (the MAT site subdirectory). You then parse the data into the MAT data format—this overwrites (synchronizes) the MAT database for the site with the data from the Meridian 1. The Meridian 1 data can be parsed at any time after retrieval.

MAT requests a customer number for all data retrievals in order to enforce the Meridian 1 Limited Access to Overlays (LAPW) restrictions. If the login password associated with the entered customer number is restricted from the print routines needed for synchronization, the data will not be retrieved.

Station Retrieval-TTY Port Configuration

During the synchronization retrieval operation, MAT requests a print of the information on the switch through the SDI port. The port used for Station Administration retrieval should be configured only as a Service Change port. The MAT terminal Emulator may be used to access Overlay 17 to temporarily configure the TTY port as SCH only. If the port is configured for other data such as Traffic or Maintenance messages, MAT will attempt to distinguish this data from relevant Station data. The retrieval log will give errors when data is not recognized as station data.

Station Retrieval- Log Window

During station retrieval, the amount of activity in other windows tasks should be limited.

During long station retrievals, or if there is enough activity in other Windows processes, the capacity of the communications buffer may be exceeded. This condition will terminate the retrieval process to prevent erroneous data from being entered into the station database.

To prevent this occurrence, the Log Window will automatically minimize itself. The icon will be labeled "Log Window:" followed by the number of the Com port. The user may wait momentarily and Restore the Log Window to check the progress of the retrieval.

The Log Window remains on the screen longer if the user resizes it to contain fewer lines. The amount of window resizing and moving during station retrieval should be limited, since these activities will prevent the retrieval activity from processing incoming characters.

If the capacity of the communications buffer is exceeded during the retrieval, necessary data is being lost. The MAT software displays a message and terminates if the buffer is exceeded. In this case, stations are not added to the MATPC database. The message is printed to the log file warning the user that the data has been lost.

Repeat the retrieval to add the new station data. It is possible to retrieve a portion of the stations on the switch by using the Specify feature in the Synchronize menu.

The Communications Task

Synchronization is a task that ensures that the MAT database reflects the data on the Meridian 1 system. The task can be achieved in two ways:

- Retrieve Meridian 1 data to the MAT database (download)
- Transmit MAT data to Meridian 1 (upload)

Note: It is recommended that you turn off all TTY messages—including bug messages—during download or upload.

Whenever you require access to a Meridian 1 system that is defined as a site for the MAT application, use the Synchronization menu of the MAT module you are currently using (Station or CPND). You can use this menu to schedule upload or download of selected data, or you can define criteria to download or upload specific station or CPND data. Whenever you modify the MAT database, you are prompted to set up a transmit task to upload the new or modified data to the system.

Synchronization

Whenever a communication task has been defined, you are prompted in a Synchronize dialog box to set up a schedule for the task.

Figure 27
Synchronization dialog

The Synchronization dialog box contains the following elements:

- Priority:** A dropdown menu currently showing "Medium".
- Hold Till:** A section containing two fields: "Date" (9/26/94) and "Time" (8:31pm).
- Buttons:** "OK", "Cancel", and "Help" buttons are located on the right side.
- Text Box:** A text box at the bottom contains the text "Station Retrieve Parse Only".

The following data can be entered to schedule a task:

Priority

The Priority drop-down list box contains the numbers 1 through 10, representing the priority level for the task. The number 1 represents High, 6 represents Medium and 10 represents Low. The default is Medium. Change the priority by selecting an item, or enter the number in the text box.

The Priority number determines where, in the current communications task queue, this task is placed.

Hold Till

Hold Till is made of two text box fields that determine when this task is sent to the communications queue.

Date

The date for the task in the format *mm/dd/yy* where *mm* is the two digit month in the range 01-12, *dd* is the two digit day in the range 01-31, and *yy* is the two-digit year. The default entry is the current date (leading zeroes are dropped when the input is validated).

Time

The time for the task in the format *hh:mmxx* where *hh* is the two-digit hour in the range 01-12, *mm* is the two-digit minutes in the range 00-59 and *xx* is AM or PM representing before or after 12:00 noon. The default entry is the current time.

Description

Station Update - Station Transmit

CPND Name Update - CPND Name transmit

CPND Update - Configuration transmit

Change as replace

This field is only available if Message Mode is in Maintenance operation. See "Station Configuration" on page 5.

If you accept the default entries, the task is scheduled immediately.

Choose **OK** to send the task to the Scheduler module of the MAT application. If the task is not immediate, the Scheduler runs iconized on the desktop. The Scheduler must be running at the scheduled time for the task to be sent to the communications task queue.

You are not required to schedule a task at any particular time. You can choose **Cancel** in this dialog and use the Synchronize menu at any time to schedule a task.

Download

This task updates the MAT database with selected data from the Meridian 1. You can select data items in the current list window (Station or CPND) or you can define criteria for system data to be retrieved.

When you select **Retrieve** in the Synchronize menu of the Station or CPND module, a submenu allows you to select criteria for downloading selected station data. The submenu contains the functions:

All: All data for stations or CPND in the site

Selected: Only items selected in the current list of CPND or Stations

Since: Only stations on the system that have changed since a specified date (not applicable to CPND)

Specify: Define criteria for stations or CPND data on the system for download

Parse Only: Parse previously transmitted data

Log: View or clear a log of communications activity

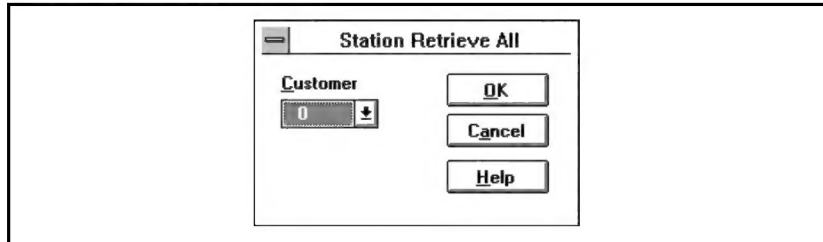
Retrieving All Data

You can set up communications with the system to retrieve all data (Station or CPND) that pertains to a single customer in the Meridian 1 system.

Station Retrieve All

Choose **All** from the Synchronize - Retrieve menu of the Station module to display the Station Retrieve All dialog.

Figure 28
Station Retrieve All dialog



The dialog contains the following data entry field:

Customer

A single-line drop-down text box with a list of the customer numbers defined for the open site. The text box contains the currently selected item.

When you choose **OK**, you are prompted to set up the communications task.

Note: During station retrieval (and conversion from STADATA), the hardware list in the Site module is updated with cards that support the type of stations being configured in MAT. These may not be the exact type of hardware cards actually installed in the Meridian 1 system. However, they will be cards with equivalent function as the installed cards.

CPND Name Retrieve All

Choose **All** from the Synchronize - Retrieve menu of the CPND module Name view to display the CPND Retrieve dialog (Figure 29).

The CPND Retrieve dialog contains the following data entry fields:

Customer Number

A single-line drop-down text box with a list of the customer numbers defined for the open site. The text box contains the currently selected item.

Language

A single-line drop-down text box with a list of languages defined for the open site. The text box contains the currently selected item.

Figure 29
CPND Name Retrieve dialog



DNIS IDC

A text box in which you can enter the DNIS IDC for this group of CPND entries.

Display Format

A single-line drop-down text box with a list of the CPND name display formats defined for the open site. The text box contains the currently selected item.

When you choose **OK**, you are prompted to set up the communications task.

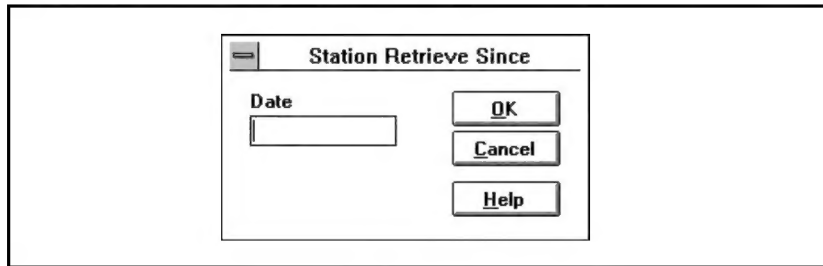
Selecting Data to Retrieve

You can select items in the Station list or CPND list window that you want to download from Meridian 1. See “Global Update” on page 59. Meridian 1 data overwrites the data currently stored in the MAT database for the selected items. When you choose **Selected** from the Station or CPND Synchronize - Retrieve menu, you are prompted to set up the communications task.

Retrieve Since Option

Choose the **Since** item in the Synchronize - Retrieve menu to display the Retrieve Since dialog.

Figure 30
Station Retrieve Since dialog



The dialog contains a single field:

Date

This text box contains the date in the format *mm/dd/yy* where *mm* is the two digit month in the range 01-12, *dd* is the two digit day in the range 01-31, and *yy* is the two-digit year.

When you choose **OK**, you are prompted to set up the communications task. The task retrieves all data that has change since the specified date.

Note: During the Synchronization Retrieval operation, MAT requests a print of the information on the system through the SDI port. MAT attempts to distinguish relevant data from other messages that may also be passed through the same port. Examples include traffic and maintenance messages. You may find that it helps the accuracy of the MAT retrieval process to temporarily disable other uses of this port.

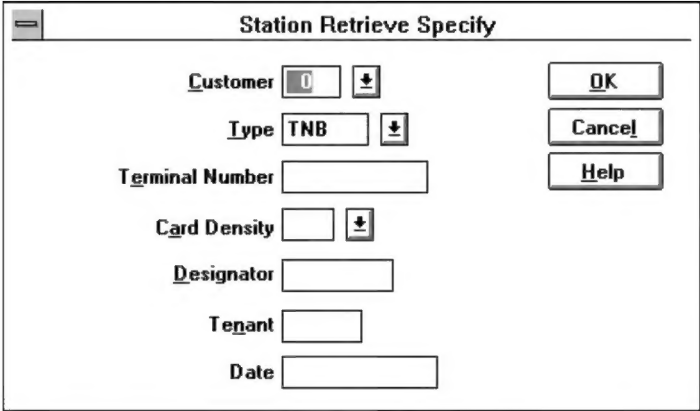
Specifying Data to Retrieve

Advanced users can specify stations or CPND (Name or Configuration) data with a one-to-one correspondence of data in certain fields for retrieval.

Station Retrieve Specify

Choose the **Retrieve - Specify** option in the Station module to display the Station Retrieve Specify dialog. Enter the data pertinent to those stations on the system that you wish to download. By default, all fields in the dialog are blank. All stations are downloaded if no data is specified.

Figure 31
Station Retrieve Specify dialog



The screenshot shows a dialog box titled "Station Retrieve Specify". It contains the following fields and controls:

- Customer:** A drop-down menu with "0" selected.
- Type:** A drop-down menu with "TNB" selected.
- Terminal Number:** An empty text input field.
- Card Density:** A drop-down menu.
- Designator:** An empty text input field.
- Tenant:** An empty text input field.
- Date:** An empty text input field.
- Buttons:** "OK", "Cancel", and "Help" are located on the right side of the dialog.

Criteria you can set for station selection include:

Customer

A single-line drop-down text box with a list of the customer numbers defined for the open site. The text box contains the currently selected item.

Type

A single-line drop-down text box with a list of the instrument types (telephones) available for the open site. The text box contains the currently selected item.

Note: Station Retrieval—Using Type = 2000

You may use this Meridian 1 feature to retrieve all 2000 type sets from the Meridian 1 system. From the **Retrieve - Specify** menu item, move to the **Type** box. You may type **2000**, although it does not appear in the list box. MAT will correctly respond to the Type prompt during retrieval

Terminal Number

Enter a TN or partial TN to retrieve only those stations attached to the part of the Terminal Number entered.

Card Density

This single-line text box allows you to enter the card type—this value is associated with the terminal number.

Designator

Enter a Designator value in this field to retrieve all stations with this Designator.

Tenant

Enter a Tenant value in this field to retrieve all of that Tenant's stations.

Date

This field accepts a date in the format *mm/dd/yy*, where *mm* is the month in the range 01-12, *dd* is the day in the range 01-31, and *yy* is the two-digit year. This retrieves all stations modified after the specified date.

Note 1: If you request a retrieval from a large Meridian 1 system, using Specify and the Type, the system may spend a long time selecting the appropriate stations. If the time-out period (set in the Site/Meridian 1/SDI dialog) is not long enough, the MAT system will determine that no more information is being sent by the Meridian 1 system and halt the retrieval.

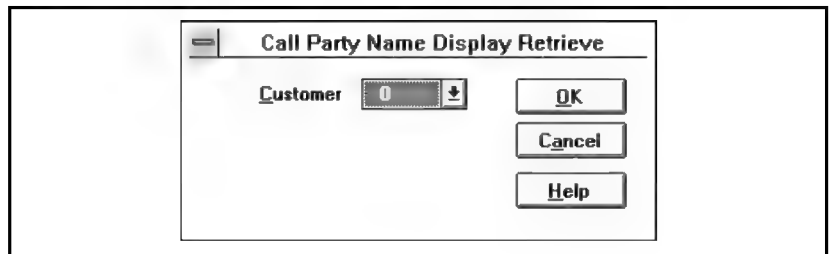
The number of stations retrieved is stated in the Retrieval Log. The time-out parameter may be lengthened to give the Meridian 1 system sufficient time to find the appropriate stations to transmit. However, a long time-out period also lengthens the time required by the MAT system to correctly identify that the Meridian 1 system has no more information to send. You need to exercise patience if you extend the time out period beyond the default values.

Note 2: The MAT system is able to retrieve selected stations from an Option 11 system. You may also retrieve all stations on an Option 11, or use the Retrieve/Specify menu item, using a partial TN.

CPND Configuration Retrieve Specify

You can retrieve customer specific CPND configuration data from the system. Select the **Retrieve - Specify** option in the CPND Configuration view window to display the CPND Retrieve Specify dialog.

Figure 32
CPND Retrieve dialog



There is a single field in this dialog:

Customer Number

A single-line drop-down text box with a list of customer numbers defined for the open site. The text box contains the currently selected item.

CPND Name Retrieve Specify

If you want to define the CPND name data for downloading, select the **Retrieve - Specify** option in the CPND module name view window to display the CPND Name Retrieve dialog.

Figure 33
Name Retrieve Specify

Note: CPND Name Retrieval—Synchronization prompt

When retrieving CPND names from the Meridian 1 system (using Overlay 95), the MAT system prompts you for additional information necessary for retrieval. The additional information differs depending on the release of the Meridian 1 system.

Display Format—before Release 19 of the Meridian 1 system, the Display Format was required for name retrieval. Beginning with Release 19, Display Format may be part of each CPND entry. Therefore, for Meridian 1 systems before Release 19, you are prompted for Display Format during name retrieval. For Meridian 1 systems beginning with Release 19, you are prompted for Display Format only if MAT does not find a valid Display Format. If MAT does not prompt for the Display Format, the applicable format is displayed, but not enabled for modification.

The criteria you can set for CPND name selection include:

Customer Number

A single-line drop-down text box with a list of the customer numbers defined for the open site. The text box contains the currently selected item.

Language

A single-line drop-down text box with a list of languages you can use for the display. The text box contains the currently selected item.

Directory Number

A numeric field that accepts up to 9 digits that represents the DN for this station. You can double-click this field to display the list of currently assigned numbers in the numbering plan for the open site. You can select the number for this station in the Directory Numbers dialog. This is described in “Directory Number Assignment” on page 26.

Display Format

A single-line drop-down text box with a list of the CPND name display formats defined for the open site. The text box contains the currently selected item.

Entry Type

A selection field containing three radio buttons for the type of entry for this station. The choices include:

Directory Number—required to enter Directory Number

Dial Intercom Group—required to enter Group Member

DNIS IDC—required to enter DNIS IDC table number and DNIS IDC

When you choose **OK**, you are prompted to set up the communications task.

Upload

This task updates the Meridian 1 data block with selected data from the MAT database. You can select data items in the current list window (Station or CPND).

When you select **Transmit** in the Synchronize menu of the Station or CPND module, a submenu allows you to select criteria for uploading selected data to Meridian 1. The submenu contains the functions:

Selected: Upload only selected items in the current list of CPND or Stations.

Log: View or clear a log of communications activity.

Selecting Data to Transmit

You can select items in the Station list or CPND list window to upload to Meridian 1 (refer to “Global Update” on page 59). The MAT data overwrites the data currently used in Meridian 1 for the selected items. When you choose **Selected** from the Station or CPND Synchronize - Transmit menu, you are prompted to set up the communications task.

Synchronization status and Retrieval

If MAT performs a retrieval, including station and CPND name, the Synchronization Status determines whether the MAT data is updated. In all cases, the Retrieval log contains a record of the retrieval and the results of any comparisons with an existing site.

- **NEW:** The data for this station should not exist on the Meridian 1 system and the station will not be updated.
- **TRN:** The data for this station in MAT should agree with the data in the Meridian 1 system. The MAT data is updated to reflect the current configuration on the Meridian 1 system.
- **CHG, RPL:** The data for this station have been changed since the last time the MAT and Meridian 1 systems have been synchronized. The station is not updated.
- **OUT:** The MAT user has marked this station for deletion, the current configuration of the station on the Meridian 1 system is not relevant.

Synchronization Times

The time it takes to retrieve or transmit data depends on the Meridian 1 to PC connection, the modem baud rate, PC configuration, and the size of the data file being retrieved. Table 1 provides examples of times for synchronization tasks using a 486 PC and a remote connection to the switch via modem.

Table 1
Meridian 1 to PC data transmission times (seconds)

Operation	Meridian 1 SDI port setting	
	1200 baud	2400 baud
Station retrieval (per station)	40-45	20-25
Station transmit (per station)	35-45	25-35
CPND retrieval (per name)	10-15	5-10
CPND transmit (per name)	10-15	5-10

Communications Logs

All Communications activity is recorded in Log files that are stored in the current working directory of your MAT system. There are four separate log files. The names follow DOS conventions as follows:

- **RTRSTN.LOG**: Station data retrieve
- **TRNSTN.LOG**: Station data transmit
- **RTRNAME.LOG**: CPND data retrieve
- **TRNNAME.LOG**: CPND data transmit

Each of these logs is accessed from the Log menu choice in the appropriate module's **Synchronization - Transmit** or **Receive** menu.

When you choose Log, a submenu allows the following functions:

View

Sends the log file to the viewer so you can browse or print the log. Log activity is appended to the end of the file, so the most recent activity is at the bottom of the viewer. See “The MAT File Viewer” on page 109.

Clear

Clears the log file. You should do this occasionally so that the file does not get too large.

Note 1: There is no limit to the size of the log files, but there is a limit to the size of log that the viewer can handle. There is a 100 page limit on log files for viewing with the **Log - View** menu item from Synchronize.

Note 2: During station retrieval, you should limit the amount of activity in other Windows tasks. During long station retrievals, or if there is sufficient activity in other Windows processes, the capacity of the communications buffer may be exceeded. This condition terminates the retrieval process to prevent erroneous data from being entered into the station database.

You may notice that the Log Window minimizes itself to prevent this occurrence. The icon is labeled "Log Window:", followed by the number of the COM port. As the communications buffer starts to fill excessively, the Log Window is minimized to allow faster processing of the incoming data. You may wait momentarily and Restore the Log Window to check the progress of the retrieval.

The Log Window will remain on the screen longer if you resize it to contain fewer lines. Similarly, you should minimize the amount of window resizing and moving during station retrieval, since these activities momentarily prevent retrieval activity from processing the incoming characters.

If the capacity of the communications buffer is exceeded, necessary data is lost to the MAT system. MAT displays a message and terminates the station retrieval process. You will notice that the stations were not added to the MAT PC database.

You may repeat the retrieval to add the new station data. Alternatively, you may use the **Synchronization - Parse Only** menu item to add the downloaded data to the MAT PC database, and continue the retrieval process from where it stopped. It is possible to retrieve a portion of the stations on the system by using the **Station Retrieve - Specify** menu item.

Viewing large log files

There is currently a 100 page limit on the size of logfiles and reports that may be displayed on the screen. This limit affects Synchronization/View/Log and Reports menu items. A message appears to warn you that the file is too large to be viewed in its entirety, and only the first 100 pages are displayed.

You may wish to avoid this limit by:

- 1 Periodically using **Synchronization Log - Clear** to prevent text from old retrievals or transmissions from unnecessarily adding to the size of the log file.
- 2 Testing large reports on a portion of the data, using the Filter feature in the report form menu. For example, the user can limit the report to the first 200 records by opening the report form and selecting the Options/Report Filter menu item. To limit the number of records, push the System Fields button, select the **REC_COUNT** field and build the expression **SYS->REC_COUNT <= 200**. If a Report Filter already exists, this clause may be added using the **.AND.** operator.
- 3 Large files may also be viewed with another program. These files are too large for the Windows Notepad, however.

Transmission errors during retrieval

You should inspect the Retrieval Log after performing a transmission. The Log reports the number of stations added, the number of stations Compared, and the number of stations with discrepancies from that comparison. In addition, the Retrieval Log may contain warnings from unrecognized data during the transmission. The unrecognized data may be the result of transmission problems.

Compare the expected number of stations to be retrieved to the number of stations actually retrieved. If too few stations were retrieved, look for warnings in the log file that may indicate that not enough data was correctly received to recognize the station.

You should also note the number of Compared stations. The first retrieval into the MAT PC database should only be Adding stations. If any stations were compared, it may indicate a transmission error in the TN field that caused MAT to treat this station as an update to an existing station, instead of creating a new station.